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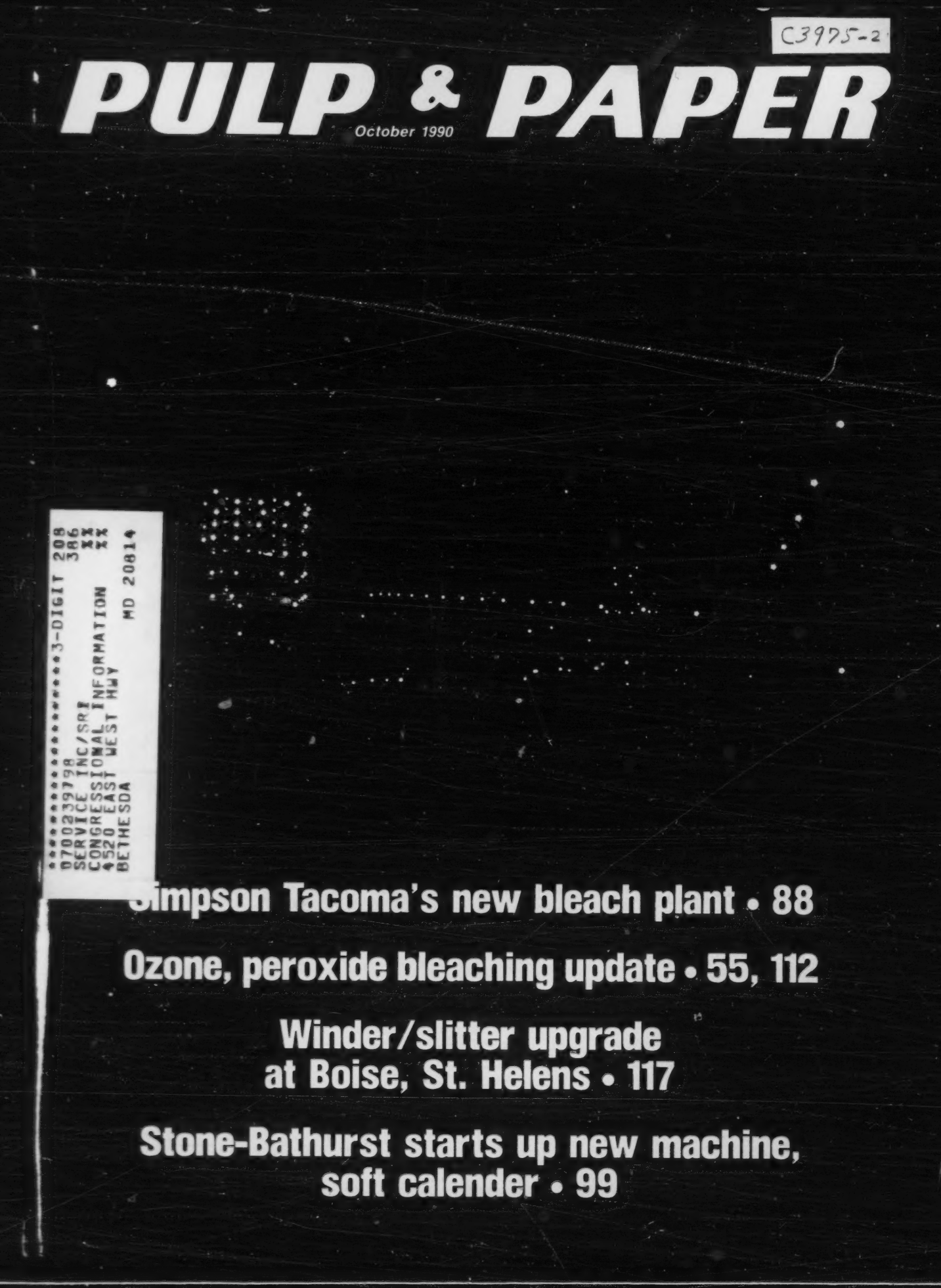
PULP & PAPER

October 1990



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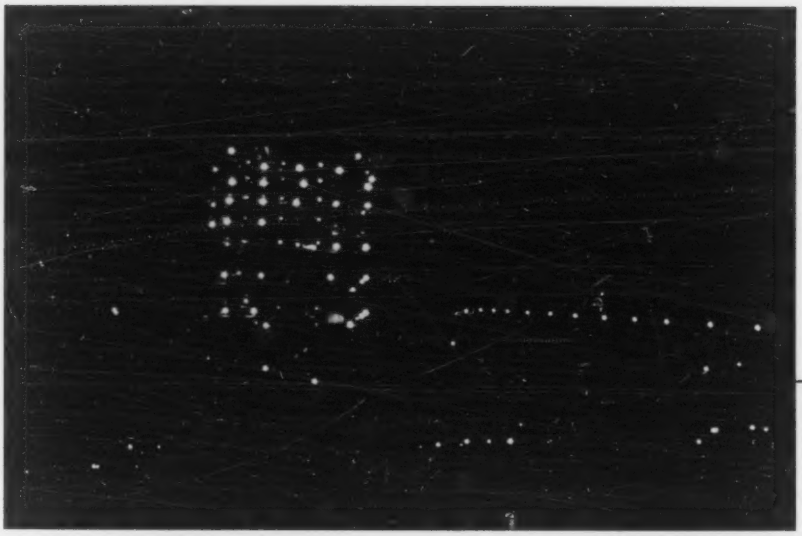
THE COVER

This issue's focus on chemical pulping technology examines recent breakthroughs in nonchlorine based bleaching and looks at major pulp mill upgrades at a U.S. and Chinese mill. **(Pulp mill night photo courtesy of Gaylord Container's Bogalusa, La., mill.)**



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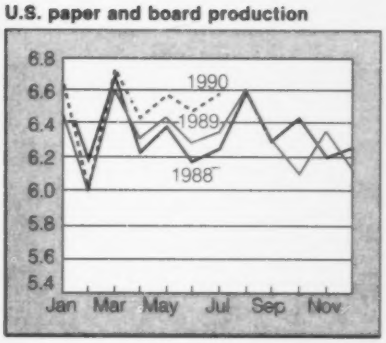
ABP

BPA

U.S. paper and board production



U.S. production of paper and paperboard totaled 6.6 million tons in July, according to the American Paper Institute, an increase of 4.0% over the same month last year. The seasonally adjusted rate of production climbed to 78 million tpy, rising 1.9% over last year's figure. The paper sector accounted for the majority of the increase, with production up 3.2% from 1989. Paperboard production rose 0.7%.

Among major grades, newsprint showed an increase of 11.1%. Shipments of printing and writing paper were up 3.3% over the January-July period, with a 4.3% rise for coated grades. Containerboard production posted a 1.4% increase, largely due to a 1.0% increase in unbleached kraft linerboard, while boxboard production was down 1.0% through July. Paperboard production for export continued strong, up 12.0% for containerboard and 16.5% for boxboard.

Canadian newsprint shipments totaled 751,000 metric tons in July, dropping 3% over July 1989. Woodpulp shipments fell to 595,000 tons, a 4% decrease. Newsprint mills operated at 94% of capacity; woodpulp mills operated at 86% compared with 95% in July 1989. ■

	Latest month (000 short tons)		% change from year ago	Annualized year-to-date (000 short tons)	% change from year ago
PAPER & PAPERBOARD PRODUCTION[1]					
Newsprint	July	580	11.1	6,499	8.7
Uncoated groundwood (s)	July	157	6.1	1,751	2.0
Coated paper (s)	July	633	10.7	7,313	4.3
Uncoated free-sheet (s)	July	964	13.1	11,498	3.8
Other printing/writing	July	114	-8.1	1,546	1.2
Total packaging and other paper (s)	July	386	-1.3	4,669	-3.7
Tissue	July	480	4.8	5,733	2.7
Total paper	**July**	**3,293**	**7.4**	**39,009**	**3.2**
Unbleached kraft paperboard	July	1,735	2.8	19,998	2.0
Semichemical medium	July	493	2.9	5,708	0.2
Bleached paperboard	July	380	-7.3	4,474	-1.4
Recycled paperboard	July	696	2.1	8,742	-1.0
Total paperboard	**July**	**3,284**	**0.8**	**38,921**	**0.7**
Total U.S. paper and paperboard output	**July**	**6,578**	**4.0**	**77,930**	**1.9**
PULP, WASTEPAPER & FIBER[2]					
Total U.S. woodpulp production	June	5,173	1.4	62,643	1.2
Market pulp production	June	783	6.0	8,653	-2.0
Wastepaper consumption at paper/board mills	June	1,798	13.0	21,050	6.1
Pulpwood consumption (cords)	June	8,042	-3.7	95,834	1.1
CONVERTED PRODUCTS STATISTICS[3]					
Corrugated box shipments (billion ft²)	July	26.444	7.3	185.169[6]	1.4
Containerboard inventories at U.S. box plants and mills	July 1	2,503	1.1		
INTERNATIONAL TRADE[4]					
U.S. paper imports (including products)	June	1,109	5.9	13,274	2.9
Imports of Canadian newsprint	June	897	40.8	8,481[6]	2.6
U.S. paper exports (including products)	June	574	14.1	8,828	8.3
Exports of unbleached kraft linerboard	June	248	69.9	2,682	15.5
Exports of woodpulp	June	560	-0.4	5,898	-7.2
Norscan pulp inventories[4]	July 31	1,682	80.9		
Norscan pulp operating rates[4]	July	91%	86%	87%	89%
CANADIAN STATISTICS[5] *(reported in metric tons)*					
Total newsprint shipments	July	751	-3.1	5,489[6]	0.2
Operating rates	July	94%	96%	95%	96%
Inventories held by U.S. consumers	July 31	1,341	2.1		
Other paper/board shipments	July	610	13.0	4,302	8.3
Woodpulp shipments (export only)	July	595	-3.7	4,402	-9.1
Operating rates	July	86%	95%	87%	95%

1. American Paper Institute. 2. API, Bureau of Census, American Pulpwood Assn. 3. Fibre Box Assn., Paperboard Packaging Council. 4. North American/Scandinavian paper-grade market pulp. 5. Canadian Pulp & Paper Assn. 6. Not annualized. (s) = Shipments.

Market pulp: Canadian and U.S. producers try different strategies to survive market slump

Grade structure: Chemical paper-grade market pulp is sold in the open market and does not include captive pulp used onsite or shipped to affiliated mills within North America. Pulp is divided into grades based on whether it is made from softwood or hardwood fiber, produced by the sulfate (kraft) or sulfite pulping process, and bleached, semibleached, or unbleached.

Northern bleached softwood kraft (NBSK) is the premium pulp grade because of its long fiber length and strength. U.S. chemical paper pulp statistics include about 1.9 million tons of fluff pulp production (including exports) used in diapers and other absorbent hygiene products. Dissolving and mechanical pulp grades are excluded from the statistics.

Production/capacity: The pulp market has been in a downward slide all year caused by customer inventory reduction. This has led to lower shipments, rising producer inventories, and falling pulp prices. Latest industry statistics show that producer inventories of chemical paper-grade market pulp hit 1.68 million metric tons at the end of July—their highest level since early 1985. Most of the decline in prices has been in hardwood and southern pine, but even the list price of benchmark NBSK was lowered in July to $800/metric ton (down from $830 in the U.S. and $840 in Europe).

The strategies of Canadian and U.S. producers have been markedly different in coping with this declining market. Canadian producers tried to hold price levels stable by taking substantial mill downtime. This is reflected in Canadian shipments figures, which were down more than 14% during first-half 1990 from a year ago, while mills operated at 86% of capacity. The logic of the Canadian position is that the supply of premium long-fiber NBSK is relatively limited, most substitution by shorter fiber pulp has already taken place, and that it is pointless to battle lower-cost southern competitors on price.

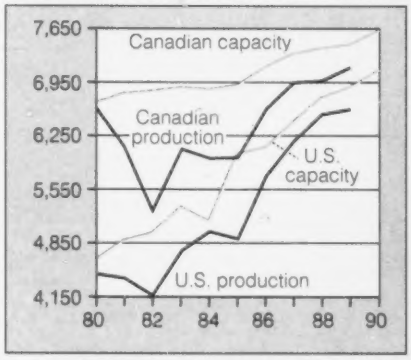
U.S. producers, on the other hand, responded to the weak market by dropping prices rapidly during the January through April period. This created an unusually large price gap with northern pulp, which increased demand for southern fiber. Shipments of U.S. mills were down only 2.8% during the first half, while they ran at 95% of capacity. Nevertheless, the impact of the higher volume on profitability was probably more than offset by the sharp price drop.

Future outlook: The pulp market is expected to remain under pressure in 1991 due to slower economic growth in the U.S. and Europe, which would affect printing/writing paper demand. In addition, market pulp capacity growth is expected to pick up next year with the completion of a number of major projects in North America and Latin America.

Examples include Weyerhaeuser Co.'s new Columbus, Miss., pulp line, which started up this summer (425,000 tpy softwood) and Daishowa Canada Co. Ltd.'s new mill scheduled for completion this fall in Peace River, Alta. (340,000 tpy hardwood). Two major eucalyptus projects scheduled for completion early next year are the Aracruz expansion in Brazil (525,000 tpy) and the new Santa Fe mill in Chile (250,000 tpy). In addition, there will be competition from three new chemi-thermomechanical pulp mills starting up in Canada and more wastepaper deinking projects.

Canadian chemical paper pulp production is projected to drop nearly 8% for all of 1990, with mills operating around 86% of capacity. However, production is expected to rebound about 5% in 1991 as customers begin to order more normally after reducing inventories and Canadian producers price their pulp more competitively. However, operating rates are projected to improve only to about 87% due to about a 3% increase in capacity. U.S. industry production is expected to increase by about 4% next year and mills are expected to continue running close to 94%. The weak U.S. dollar is expected to boost export demand helping offset slower growth in U.S. consumption.

SUPPLY/DEMAND (000 tons)



FORECAST (000 tons)

U.S.	1989	1990e	1991e
Production	6,571	6,680	6,975
Capacity[1]	6,890	7,100	7,462
Utilization rate	95.4%	94.0%	93.5%
Imports	2,785	2,752	2,880
Exports	4,072	4,016	4,300
Apparent U.S. consumption	5,284	5,416	5,555
Canada			
Production	7,089	6,550	6,900
Capacity[1]	7,429	7,592	7,910
Utilization rate	95.4%	86.3%	87.2%

e = *Pulp & Paper* 1990 estimate.
1. Based on 1989 American Paper Institute and Canadian Pulp & Paper Assn. capacity surveys.

TOP U.S. PRODUCERS (000 tpy)

	Annual capacity (000 short tpy)	Market share (%)
1. Georgia-Pacific[1,2,5,6]	1,675	11.4
2. Weyerhaeuser[1,2,3,5,6]	1,560	10.6
3. International Paper[1,2,6]	850	5.8
4. Canadian Pacific[1,2,3,4]	800	5.5
5. Fletcher Challenge[1,3,4]	705[a]	4.8
6. ~~Champion~~ International[1,2,3]	695[b]	4.7
7. Parsons & Whittemore[1,2]	660	4.5
8. Noranda[1,2,3,5]	568[c]	3.9
9. Canfor[1,3,4]	555[d]	3.8
10. MacMillan Bloedel[1,3,4]	500	3.4

Market share of top five companies: **39%**

Market share of top ten companies: **58.8%**

North American capacity (1990): **14.692 million metric tons**
U.S.: 1.762; Canada: 2.027[a]

1. Bleached softwood kraft. 2. Bleached hardwood kraft. 3. Semibleached softwood kraft. 4. Unbleached kraft. 5. Bleached sulfite. 6. Fluff pulp.
a. Includes 45% of Donohue St Felicien.
b. Includes 50% of Caribou Pulp & Paper.
c. Includes 100% of Fraser and James Maclaren and 50% Northwood Pulp (but 48%-owned MacMillan Bloedel shown separately).
d. Includes 50% of Howe Sound Pulp & Paper.